SECOND PERIODIC REVIEW
(DRAFT)

GENERAL ELECTRIC SPOKANE SITE
SPOKANE, WA

EASTERN REGIONAL OFFICE

TOXICS CLEANUP PROGRAM

MARCH 2008

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1.0 INTRODUCTION

This document is the State of Washington Department of Ecology (Ecology)'s second periodic review of post-cleanup conditions and monitoring data to assure the continued protection of human health and the environment at the General Electric Spokane Site (Site). This Site was listed on the National Priority List (NPL) by the United States Environmental Protection Agency (USEPA) in 1988. Ecology was then established as the lead agency for oversight of the cleanup under an agreement with USEPA. Thus, cleanup activities were conducted pursuant to Chapter 70.105D RCW, the Model Toxics Control Act (MTCA), and Chapter 173-340 WAC, MTCA Cleanup Regulation.

Cleanup actions at this Site were completed under a Consent Decree that was filed in Spokane County Superior Court on January 5, 1994 and amended on March 5, 1997. General Electric Company (GE) implemented the remedial actions in accordance with the design documents required by the Site's Cleanup Action Plan (CAP) dated March 29, 1993, and amended February 3, 1997. MTCA's 1991 edition was in effect at the time the CAP was finalized and the 1993 edition was in effect at the time the CAP was amended in 1997.

Cleanup actions at the Site resulted in residual concentrations of Polychlorinated Biphenyls (PCBs) exceeding MTCA Method A cleanup levels for ground water established under WAC 173-340-720(2) [1991, 1993] and for soil established under WAC 173-340-740(2) [1991, 1993]. Site periodic reviews are required because WAC 173-340-420 (1) [1991, 1993] provides that

> " if the department selects or approves a cleanup action that results in hazardous substances remaining at a site at concentrations which exceed Method A or Method B cleanup levels established under WAC 173-340-700 through 173-340-760 or if conditional points of compliance have been established, the department shall review the cleanup action no less frequently than every five years after the initiation of such cleanup action to ensure that human health and the environment are being protected".

Ecology conducted the first periodic review for this Site in 2003 which covered the period from the 2nd Quarter 1997 up to and including the 2nd Quarter 2002 ground water monitoring events. Based on this review, Ecology determined that further periodic reviews were necessary. This second review is for the ground water monitoring period from the 3rd Quarter 2002 through 2nd Quarter 2007.

2.0 SUMMARY OF SITE CONDITIONS

2.1 SITE DESCRIPTION

The GE Spokane property is located at 4323 East Mission Avenue in Spokane, WA and is approximately 1,200 feet south of the Spokane River (Figure 1). The Site includes the GE property which is less than 2 acres in size, adjacent vacant properties owned by Avista (formerly Washington Water Power) to the west, and private property formerly owned by Mr. Marvin Riley (now owned by 125 East Mission LLC) to the north. The City of Spokane Havana Street right-of-way is to the west of the vacant Avista lot as shown in Figure 2. The Lawton Converter property is to the west of the right-of-way. These properties are located in an area that is zoned Light Industrial.

GE owned and operated a transformer service shop on its property from 1961 to 1980. From 1975 to 1980, GE also leased a warehouse for its operations from the adjacent property that was owned by Mr. Riley. Oils containing Polychlorinated Biphenyls (PCBs) were released to Site soils as a result of transformer service operations.

PCBs were at first detected in Site soils in 1985. Three subsequent Remedial Investigations (RIs) performed by GE contractors found PCBs in surface soils and dry wells in the GE property as well as in the Avista and Riley properties. In the West Dry Well, the PCBs in soil caused ground water contamination. It was also determined that PCBs in ground water were being transported to properties not owned by GE.

Ground water across the Site flows primarily northwesterly as shown in Figure 3. Based on historical ground water elevation data, high ground water elevations occur in the spring and the lows occur in the summer. The PCB plume in ground water extends from the West Dry Well area (located in the vicinity of MW-20 in Figure 3) to the northwest. Lateral extent of the plume is limited due to the velocity of ground water in this area, and the relatively narrow source area.

Interim actions were undertaken in 1989 to facilitate access to a portion of the Site for further characterization of soil and debris. GE demolished buildings and excavated most subsurface tanks and drainage structures. PCB-bearing soils and debris were used to construct a “test cell” to demonstrate the effectiveness of an innovative technology, called In-Situ Vitrification (ISV), in destroying PCBs to levels required under federal law and regulation.

The RI and the Feasibility Study (FS) were completed in 1992. GE proposed that ISV be chosen as the remedial technology to clean up Site soils once its effectiveness was demonstrated. This ISV treatment effectiveness required the completion of a federal Toxic Substances Control Act (TSCA) demonstration test and acquiring a TSCA permit.

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2.2 CLEANUP ACTION PLAN

2.2.1 Remedial Action Objectives

Ecology issued the Cleanup Action Plan (CAP) for the Site in 1993. The Remedial Action Objectives (RAOs) to mitigate the long-term risks to human health and the environment as identified in the CAP are as follows:

- Reduce the potential for migration of PCBs from soil to ground water to protect ground water quality.
- Prevent dermal contact or ingestion of soils to protect human health in an industrial exposure setting.
- Prevent ingestion of PCB-bearing ground water.
- Prevent off-property migration of PCB-bearing ground water.

2.2.2 Cleanup Levels and Points of Compliance

Ecology's 1993 CAP established PCBs and Total Petroleum Hydrocarbons (TPHs) as chemicals of concern for Site soils and PCBs as chemicals of concern in ground water. The surface soil cleanup levels were based on exposure under industrial land use conditions. The ground water cleanup level is based on current or potential source of drinking water use.

The cleanup levels identified in the CAP are the following:

Media	Chemical	Cleanup Level	Basis
Surface Soil (0-15 feet)	PCBs	10 mg/Kg	Method A, Industrial WAC 173-340-745(2)(a)(i)
Deep Soil (>15 feet)	PCBs	60 mg/Kg	Method B, protection of ground water, WAC 173-340-740-(3)(ii)(A)
Soil	TPH	100 mg/Kg	Method A, Industrial WAC 173-340-745(2)(a)(i)
Ground Water	PCB	0.1 ug/L	Method A, WAC 173-340-720(2)(a)(i). This cleanup level is the total value for all PCBs. This is based on concentration derived using the Method B formula for drinking water and adjusted for the Practical Quantitation Limit (PQL).

The Points of Compliance are:

For soils where the cleanup level is based on human exposure via direct contact, the point of compliance is from the ground surface to fifteen feet below the ground surface. For soil cleanup levels based on protection of ground water, the point of compliance is throughout the Site.

For ground water, the point of compliance is throughout the Site and extends to the outer boundary of the plume.

2.2.3 Selected Cleanup Action

The 1993 CAP identified the following cleanup actions:

- Treat soils via ISV. Should ISV be unavailable, perform stabilization of deep soil through grouting, and treat shallow soils via thermal destruction.
- Place use restrictions on soils indicating that the Site is to be used only for industrial purposes.
- Implement institutional controls to restrict extraction and use of contaminated ground water.
- Institute a ground water monitoring program to demonstrate compliance with cleanup standards

A consent decree implementing the CAP was signed in December 1993.

The ISV demonstration test, originally planned for 1991, was delayed until 1994 following failure of an Operational Acceptance Test of the ISV equipment at the vendor's Richland, Washington Test Site. The on-site 1994 demonstration of ISV was largely successful, but irregularities in performance sampling and analysis led to conditions on the permit issued by USEPA in 1995. Cost information obtained during the demonstration test led to a reconsideration of the selected remedy.

Ecology amended the CAP and Consent Decree in an Explanation of Significant Differences in 1996 to allow off-site disposal of soils bearing low concentrations of PCBs because of substantial and disproportionate costs.

2.3 SUMMARY OF CLEANUP ACTIONS

The following cleanup actions were undertaken at the Site:

- Deep West Dry Well soils in contact with ground water were grouted in 1996 to decrease their mobility and reduce PCB concentrations in ground water. A significant volume of these dry well soils were removed and stockpiled and vitrified on Site that same year.

- About 2500 tons of soils bearing high concentrations of PCBs and West Dry Well structural materials were vitrified on Site in late 1996.

- 27,400 tons of low concentration soils were excavated and disposed off-site in 1997. GE excavated soils on Avista-owned property to the industrial cleanup level of 10 mg/Kg. Soils, in the Riley owned property, were removed to the residential cleanup level of 1 mg/Kg, a level which does not require land use controls. A significantly greater volume of PCB-bearing soils was encountered than predicted by RI data. Once soils had been removed to the proper cleanup level except for those on GE-owned property, GE ceased excavation and contained the volume of remaining soils by placing an asphalt cap on the northwest corner of the Site (see Figure 3). GE then petitioned Ecology for a change in cleanup level. That petition was based upon consideration of the 1996 revisions to the PCB toxicity published on the Integrated Risk Information System. Ecology denied this request. However, Ecology evaluated and subsequently agreed to the protectiveness of containment measures implemented by GE on this small volume of site soils. Ecology published a second Explanation of Significant Differences in late 1998 outlining this change, which became final after public notice and opportunity to comment on January 28, 1999.

- Long-term monitoring of ground water for PCBs was initiated in 1994.

- Institutional controls implemented for this Site included:
  - Fencing the GE property.
  - Inspecting and maintaining the asphalt cap in the GE property.
  - Recording of Restrictive Covenants to prohibit activities that may interfere with the cleanup actions and/or to restrict land use and use of ground water for the GE property, the Avista property, and the Lawton Converter property.

All actions taken since publication of the 1993 CAP are documented in detail in the 1998 Final Cleanup Action Report. USEPA issued a “construction complete” determination thereafter.

2.4 LONG-TERM GROUND WATER MONITORING

Implementation of the long-term ground water monitoring started in 1994 in accordance with the 1993 Ground Water Monitoring Plan. This plan was later modified in 1998 and 2003. The ground water monitoring network is shown in Figure 3. MW01 is the upgradient well. MW01 and MW20 are located on GE’s property. MW19 and MW21 are located to the west of the Site on property owned by Avista. MW09 U/L, MW10, and MW11 are located on the west side of Havana Street on property owned by Lawton Converter.

In 2003, Ecology approved the discontinuation of the collection of ground water samples for PCB analysis from wells MW09U/L. PCBs were never detected from these two wells that monitor deeper layers of the aquifer.

Quarterly ground water sampling was conducted until the second quarter of 2007. Ecology has approved GE's request to reduce the sampling frequency to semi-annually starting the second half of 2007. USEPA Method 8082 with a modified procedure to lower the detection limit has been used to analyze for the PCBs.

2.5 INSPECTION AND MAINTENANCE OF ASPHALT CAP AND FENCE

Visual inspections for integrity and condition of the asphalt cap and the fence have been conducted at the Site during scheduled ground water monitoring events. In September 2007, cracks were observed in some portions of the cap. These cracks were patched as described in the November 29, 2007 "GE Spokane Cap Inspection and Repair" report. The fence surrounding the GE property remains intact.

3.0 PERIODIC REVIEW

WAC 173-340-420(2)[1991, 1993] requires that:

"When evaluating whether human health and the environment are being protected during periodic reviews, the factors the department shall consider include:

(a) The effectiveness of ongoing or completed cleanup actions;
(b) New scientific information for individual hazardous substances of mixtures present at the site;
(c) New applicable state and federal laws for hazardous substances present at the Site;
(d) Current and projected site use;
(e) Availability and practicability of higher preference technologies; and
(f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

The department shall publish a notice of all periodic reviews in the site register and provide an opportunity for public comment."

3.1 FIRST PERIODIC REVIEW

Ecology conducted the first Periodic Review in March 2003. This covered the period from the 2nd Quarter 1997 up to and including the 2nd Quarter 2002 ground water monitoring events. This report concluded that:

- The remedy is functioning as intended by the decision documents.
- The exposure assumptions, toxicity data, cleanup levels, and RAOs remain valid.
- No additional information is available which could call into question the protectiveness of the remedy.

Ground water cleanup level was not achieved at the point of compliance during the first review period. The report recommended the continuation of ground water monitoring.

This first review also established the following additional actions:

- Consideration of including congener analysis in the ground water monitoring program which may be appropriate in the future to achieve risk-based cleanup levels.
- Implementation of institutional controls, in the form of deed restrictions, on the City of Spokane property. PCB concentrations exceeding the cleanup level were observed in MW-18.

3.2 SECOND PERIODIC REVIEW

This second periodic review is for the period covering the ground water monitoring events from the 3rd Quarter 2002 through the 2nd Quarter of 2007. Ground water monitoring data, cap inspection reports, and existing institutional controls were evaluated. Applicable cleanup standards were also reviewed.

3.2.1 Ground Water Monitoring Data Review

During this review period, ground water samples were collected quarterly for PCB analysis from the monitoring wells shown in Figure 3 with the exception of MW09U/L. Samples were analyzed for PCBs using USEPA Method 8082 with a modified extraction procedure to lower the detection limit to 0.047 ug/L. PCBs detected under this Method are reported as Aroclor equivalents. The total PCBs is the sum of the different Aroclors.

Table 1 and Figure 4 show the total PCB concentrations in ground water for five years of quarterly monitoring data (3rd Quarter 2002 through 2nd Quarter 2007) from the eight compliance wells. Figures 5 through 12 show the total PCB concentrations and ground water elevations for each of the compliance wells. Nondetects in these figures were plotted as half of the detection limit (i.e. 0.0235 for a detection limit of 0.047).

Aroclor 1260 was detected in all samples. Aroclor 1254 was only detected in one sample during this review period. Thus, total PCB concentrations (the sum of all Aroclor values) are the same as the Aroclor 1260 concentrations since no other Aroclor equivalents were detected. An example of reported Aroclor concentrations is shown in Table 2.

Ground water levels during this review period were generally highest during the spring and lowest during the late summer. A general increasing trend in ground water elevations was observed during this reporting period, as shown in Figure 5 for elevations measured in MW01, the upgradient well. Similar trends were observed for the other monitoring wells. There is an observed relationship between the PCB concentrations and ground water elevations as shown in Figures 7 and 10. Increases in PCB concentrations were observed during or following increases in ground water elevations. This suggests that there are still residual PCBs in the smear zone that are transferred to the ground water due to the rising water table.

3.2.1.1 Contaminant Trends

<u>MW01 (Figure 5)</u>

This is the upgradient well. PCBs in this well were all nondetects.

MW20 (Figure 6)

This well is in the vicinity of the West Dry Well, the PCB source area and the grouted zone. PCBs were detected in seven out of the twenty sampling events and exceeded the cleanup level only once (at 0.11 ug/L) in November 2004. From May 2005 through June 2007, PCBs were detected only once in June 2006 but was below the cleanup level. Higher detections were associated with higher ground water elevations.

MW19 (Figure 7)

This well is downgradient of the West Dry Well. PCBs were detected in this well throughout this review period. PCB concentrations initially exceeded the cleanup level during 2002 and 2003. However, from September 2003 through June 2007, cleanup levels were exceeded only twice: June 2004 at 0.18 ug/L and June 2006 at 0.17 ug/L. Both concentrations are less than two times the cleanup level. These two concentrations occurred at the highest ground water elevation for the particular year. The observed concentrations show a decreasing trend in PCB concentrations despite the general increasing trend in ground water elevations at the Site.

MW21 (Figure 8)

PCB detections in this well were very sporadic. These detections did not exceed cleanup levels. This well appears to be near the edge of a long narrow plume. Higher detections occurred during high ground water elevations.

MW10 (Figure 9)

PCB concentrations in this well were all nondetects for the second five-year review period.

MW11 (Figure 10)

This is the only well that consistently showed PCB concentrations above the cleanup level. PCB concentrations appear to be strongly correlated to ground water elevations with the maximum PCB concentrations for each year occurring during or slightly following the highest ground water elevations. Observed maximum concentrations for each year have been decreasing even though ground water elevations have been increasing. PCB concentrations during this review period exhibit a decreasing trend despite increasing ground water elevations.

MW18 (Figure 11)

PCB detections were all below the cleanup level. Higher detections occurred following high ground water elevation periods.

MW22 (Figure 12)

This is the monitoring well that is closest to the Spokane River. PCB concentrations throughout this review period were nondetects except for one that is below the cleanup level observed in June 2003.

3.2.2 Five Year Review Criteria

3.2.2.1 Effectiveness of completed cleanup actions.

- The PCB cleanup level in ground water has yet to be achieved at the point of compliance primarily because PCB concentrations in MW11 and MW19 exceeded the cleanup level. However, ground water quality in terms of PCB concentrations continued to improve as a result of the cleanup actions at the Site as evidenced by the decreasing concentration trends in MW11 and MW19, and nondetects or detections below cleanup levels in all the other wells. This improvement is attributed to the grouting of the dry well, the excavation of PCB-contaminated soils, and natural attenuation. Existing institutional controls prohibit the use and thus limit exposure to ground water.

- The asphalt cap over PCB contaminated soils in the GE property continues to perform as an impermeable cover system to minimize the migration of PCBs to ground water and prevent direct contact with, or ingestion of PCBs in soil.

- Institutional controls continue to prohibit activities that will interfere with the implemented cleanup actions and to limit land use to industrial. The fence around the GE property is intact and in good condition and continues to prevent access to the Site.

While ground water monitoring continues to be necessary, the cleanup actions implemented at the Site remained effective during this review period.

3.2.2.2 New scientific information for individual hazardous substances for mixtures present at the site.

There is no new scientific information for the PCBs, specifically Aroclor 1260, during this review period.

3.2.2.3 New applicable state and federal laws for hazardous substances present at the Site.

There are no new applicable state and federal laws on PCBs. However, this cleanup is governed by Chapter 173-340 WAC [1991, 1993]. This regulation was amended in 2001 and 2007. Pertinent MTCA amendments that have occurred since the 1991 and 1993 editions are as follows:

WAC 173-340-420. Periodic Review

The following sections of WAC 173-340-420 on periodic reviews as amended in 2001 state:

> **(2) Applicability**. The department shall conduct periodic review of a site whenever the department conducts a cleanup action; whenever the department approves a cleanup action under an order, agreed order or consent decree; or, as resources permit, whenever the department issues a no further action opinion; and one of the following conditions exists, at the Site:
>
> (a) Where an institutional control and/or financial assurance is required as part of the cleanup action;
> (b) Where the cleanup level is based on a practical quantitation limit as provided for under WAC 173-340-707; and
> (c) Where, in the department's judgment, modifications to the default equations or assumptions using site-specific information would significantly increase the concentration of hazardous substances remaining at the site after cleanup or the uncertainty in the ecological evaluation of the reliability of the cleanup action is such that additional review is necessary to assure the long-term protection of human health and the environment.
>
> **(3) General requirements**. If a periodic review is required under subsection (2) of this section, a review shall be conducted by the department at least every five years after initiation of a cleanup action. The Department may require potentially liable persons to submit information required by the department to conduct a periodic review.

The review criteria remain unchanged and are listed under WAC 173-340-420(4) under the amended MTCA.

These amendments do not change the requirement that periodic reviews are necessary for this Site. Institutional controls, in the form of land use and ground water withdrawal restrictions exist for the Site, and the Method A cleanup level for PCBs in ground water is based on the Practical Quantitation Limit (PQL.)

MTCA 2001 and 2007 Amendments on Cleanup Levels

The February 2001 amendment made significant changes to the cleanup standards. However, the Method A cleanup level for PCBs remained the same. The maximum contaminant limit (MCL) for PCBs remained at 0.5 ug/L. WAC 173-340-708(8)[1991, 1993] was amended to add other sources of reference doses and cancer potency factors, and added toxicity equivalency factors as an acceptable method for assessing the cancer risk of certain dioxins, furans, and polycyclic aromatic hydrocarbons. Method B and C formula levels were established for Aroclor 1016, Aroclor 1254, and total PCBs using the then current Carcinogen Potency Factors and Reference doses.

In November 2007, Ecology amended Chapter 173-340 WAC to clarify the policies and procedures for establishing cleanup levels for mixtures of dioxins/furans, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs). WAC 173-340-708(8)[2001] was again amended to require that cleanup levels for mixtures of PCBs be based on a cancer risk of 10^{-6}. The amendment also provides the option to establish PCB cleanup levels using information on PCB congeners and using current TEF values to evaluate PCB mixtures.

Total PCB cleanup levels for soil and ground water under the current MTCA are as follows:

Ground Water Cleanup Level, ug/L				
	Aroclor 1016	**Aroclor 1254**	**Aroclor 1260**	**Total PCBs**
Method A				0.1
Method B Formula				
Carcinogen				0.044
Noncarcinogen	1.1	0.032		
Method C Formula				
Carcinogen				0.44
Noncarcinogen	2.5	0.7		
Soil Cleanup Level, mg/Kg				
	Aroclor 1016	Aroclor 1254	Aroclor 1260	Total PCBs
Method A				
Unrestricted Land Use				1.0
Industrial				10.0
Method B				
Carcinogen				0.5
Noncarcinogen	5.6	1.6		
Method C Industrial				
Carcinogen				66
Noncarcinogen	250	**70**		

There are no current cleanup levels for Aroclor 1260, the PCB that is present at the GE Site. The Method A cleanup levels that were applied to this Site were not changed as a result of the amendments. As such, Ecology has determined that the Method A cleanup levels for PCBs identified in the CAP remain protective of human health and the environment.

3.2.2.4 Current and projected site use.

There have been no changes in current or projected future site use. The projected use for the Site remains industrial, consistent with that of the adjacent properties.

3.2.2.5 Availability and practicability of higher preference technologies.

The excavation and disposal of PCB-contaminated soils that are contained inside the GE property is still technically an option. However, Ecology has made a determination that this is not practical or necessary in terms of cost and protectiveness.

3.2.2.6 Availability of improved analytical techniques to evaluate compliance with cleanup levels.

The analytical method currently employed for PCBs in ground water is USEPA Method 8082 with a modified extraction procedure to lower the detection limit. This method analyzes for aroclors, and the sum of all the aroclors represents the total PCBs. Since the cleanup level for ground water is in terms of total PCBs, this method is still adequate to meet the objectives of ground water compliance monitoring at this time.

Congener-based analyses are also available for PCBs. USEPA Method 8082 may be employed for a limited congener analysis. In 2002, Ecology collected split samples for this limited congener analysis. This indicated that Aroclor analysis detected the presence of PCBs at the same locations the congener analysis detected PCBs. It was also determined that the congener analysis did not offer a benefit in terms of compliance with cleanup levels assessment.

The USEPA Method 1668 is an analytic technique that quantifies over 200 individual congeners. This method can support the evaluation of toxicity equivalent concentrations for risk assessment purposes. While this method is available, it is expensive, and the data provided is not necessary to meet the objectives of ground water compliance with cleanup level assessment at this Site.

4.0 CONCLUSIONS

- The cleanup actions implemented at the Site continue to be protective of human health and the environment.

- Ground water cleanup levels have not been attained at the Site primarily because PCB concentrations in MW11 and MW19 still exceed the cleanup level. However, institutional controls prohibit the use of and therefore prevent the exposure of PCBs in ground water.

- Soils exceeding the cleanup level that are contained in the GE property comply with cleanup standards under WAC 173-340-740(6)(d)[1991, 1993] or WAC 173-340-740(6) (f) [2001, 2007] since the long-term integrity of the containment system is ensured and the requirements for containment technologies are met.

- Existing institutional controls are effective in protecting public health and the environment from exposure to hazardous substances and protecting the integrity of the cleanup action.

- Congener analysis, which was recommended in the first five-year review as a consideration, is not necessary at this time since the Method A PCB cleanup level for ground water has not changed.

- Ground water PCB cleanup level was not exceeded in MW18 or MW22 during this review period. At this time, there is no need for institutional control in the form of deed restrictions for the City of Spokane property. A reassessment of this need is necessary if exceedances to the PCB cleanup level in ground water are observed in future monitoring events.

5.0 RECOMMENDATIONS

- Ground water monitoring and reporting to Ecology is to continue since the cleanup level of PCBs in ground water has not been achieved at the point of compliance. As approved by Ecology, ground water monitoring will be conducted semi-annually for the rest of performance monitoring or until modified by Ecology. Sampling frequency will be reevaluated for confirmation monitoring.

- GE will continue to inspect the cap and conduct repairs as necessary. Documentation of cap and fence integrity inspections and any repairs will be provided in ground water monitoring reports.

The third five-year review will be for the period starting the second half or 2007 until the first half of 2012.

6.0 REFERENCES

Bechtel, Final Cleanup Action Report, GE-Spokane Remedial Design/Remedial Action Project, August 1998.

Golder Associates, Third Quarter 2002 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, October 26, 2002.

Golder Associates, Fourth Quarter and Annual 2002 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, January 20, 2003.

Golder Associates, First Quarter 2003 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, April 28, 2003.

Golder Associates, Second Quarter 2003 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, July 30, 2003.

Golder Associates, Third Quarter 2003 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, October 29, 2003.

Golder Associates, 2004, Fourth Quarter and Annual 2003 Groundwater Compliance Monitoring Report for the General Electric Spokane Washington Site, January 29, 2004.

Golder Associates, 2004, First Quarter 2004 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, April 28, 2004.

Golder Associates, 2004, Second Quarter 2004 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, July 29, 2004.

Golder Associates, 2004, Third Quarter 2004 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, October 26, 2004.

Golder Associates, 2005, Fourth Quarter and Annual 2004 Groundwater Compliance Monitoring Report for the General Electric Spokane Washington Site, January 2005.

Golder Associates, 2005, First Quarter 2005 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, April 2005.

Golder Associates, 2005, Second Quarter 2005 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, July 2005.

Golder Associates, 2005, Third Quarter 2005 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, July 2005.

Golder Associates, 2006, Fourth Quarter and Annual 2005 Groundwater Compliance Monitoring Report for the General Electric Spokane Washington Site, January 2006.

Golder Associates, 2006, First Quarter 2006 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, April 2006.

Golder Associates, 2006, Second Quarter 2006 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, July 2006.

Golder Associates, 2007, Third Quarter 2005 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, October 2006.

Golder Associates, 2007, Fourth Quarter and Annual 2006 Groundwater Compliance Monitoring Report for General Electric Spokane Washington Site, January 2007.

Golder Associates, First Quarter 2007 Groundwater Compliance Monitoring Report for General Electric Spokane, Washington Site, April 27, 2007.

Golder Associates, Second Quarter 2007 Groundwater Compliance Monitoring Report for the General Electric Spokane, Washington Site, July 30, 2007.

Golder Associates, GE Spokane Cap Inspection and Repair, November 29, 2007.

Ecology, 1993, Final Cleanup Action, Former General Electric Spokane Shop, Exhibit B to Consent Decree 93206059-3.

Ecology, 1996, Amendment to Cleanup Action Plan and Explanation of Significant Differences, Exhibit A to First Amendment to Consent Decree 93206059-3.

Ecology 1999, Amendment to Cleanup Action Plan and Explanation of Significant Differences No.2, Consent Decree 93206059-3.

Ecology, Periodic Review, General Electric/Spokane Site, 1997-2002, March 20, 2003.

FIGURES

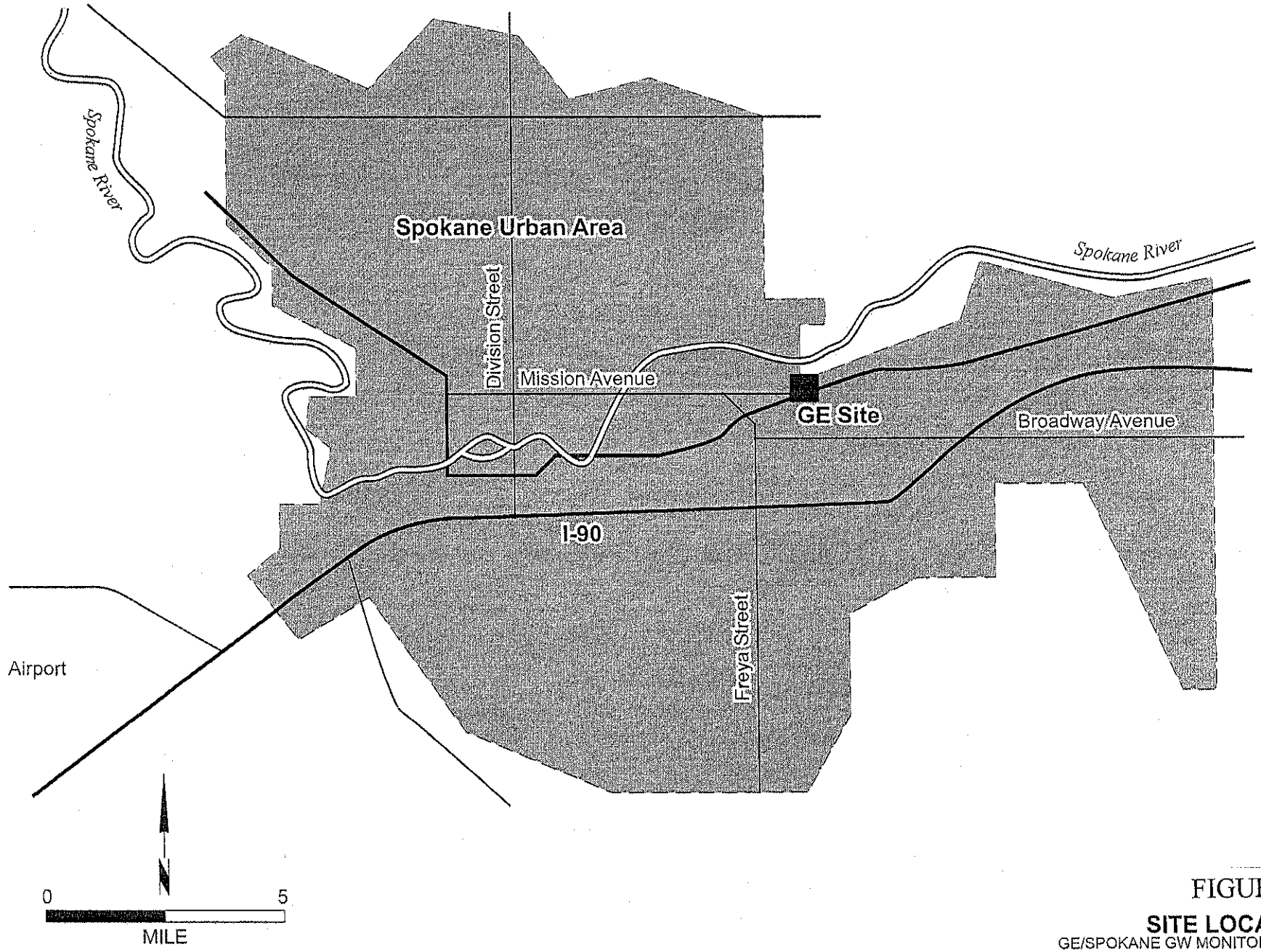


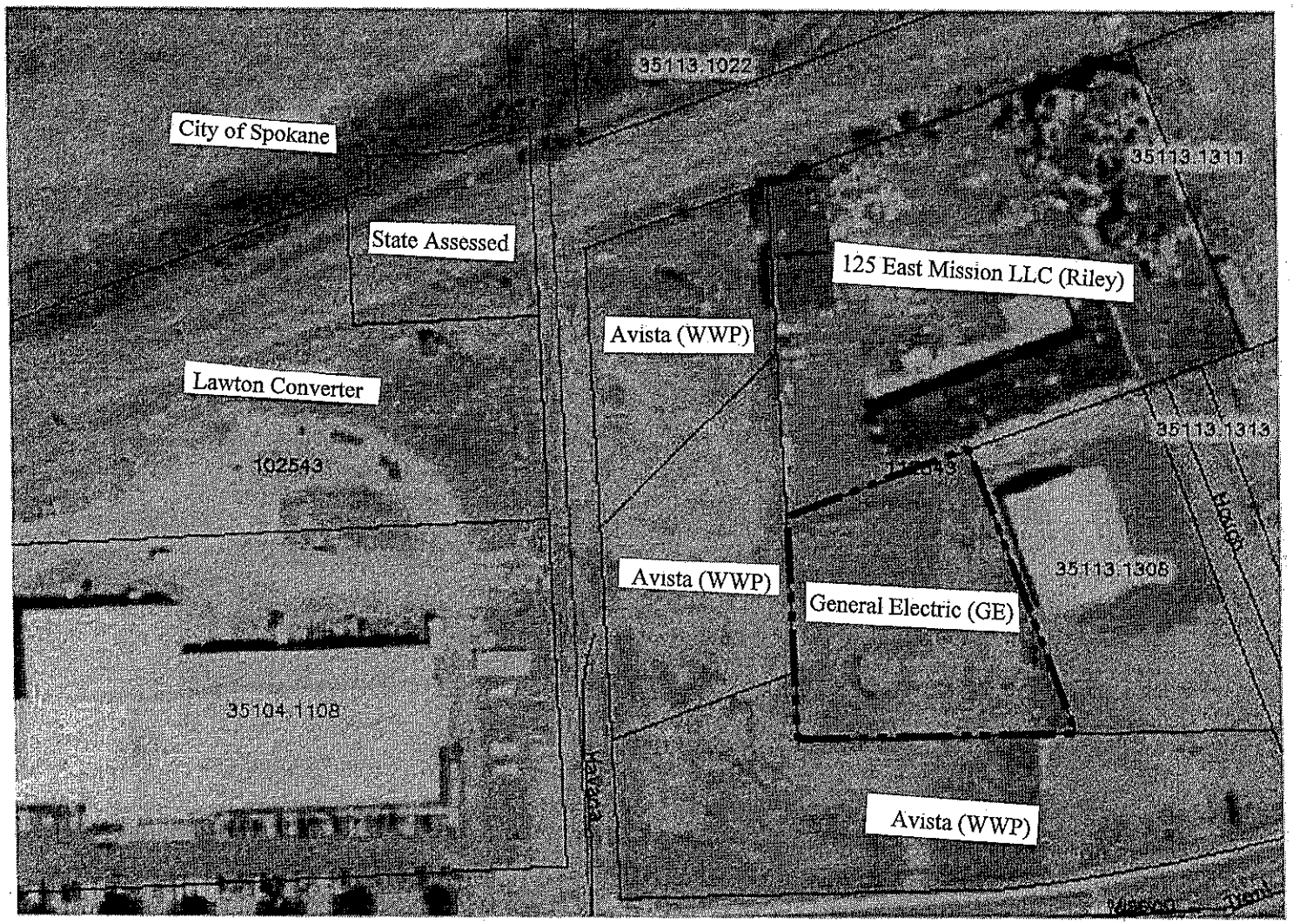
FIGURE 1

SITE LOCATION

GE/SPOKANE GW MONITORING/WA

DRAWING NO. 00312500034440fg01.fh11 DATE 12/15/05 DRAWN BY EL

Golder Associates



LEGEND

GE Parcel Boundary

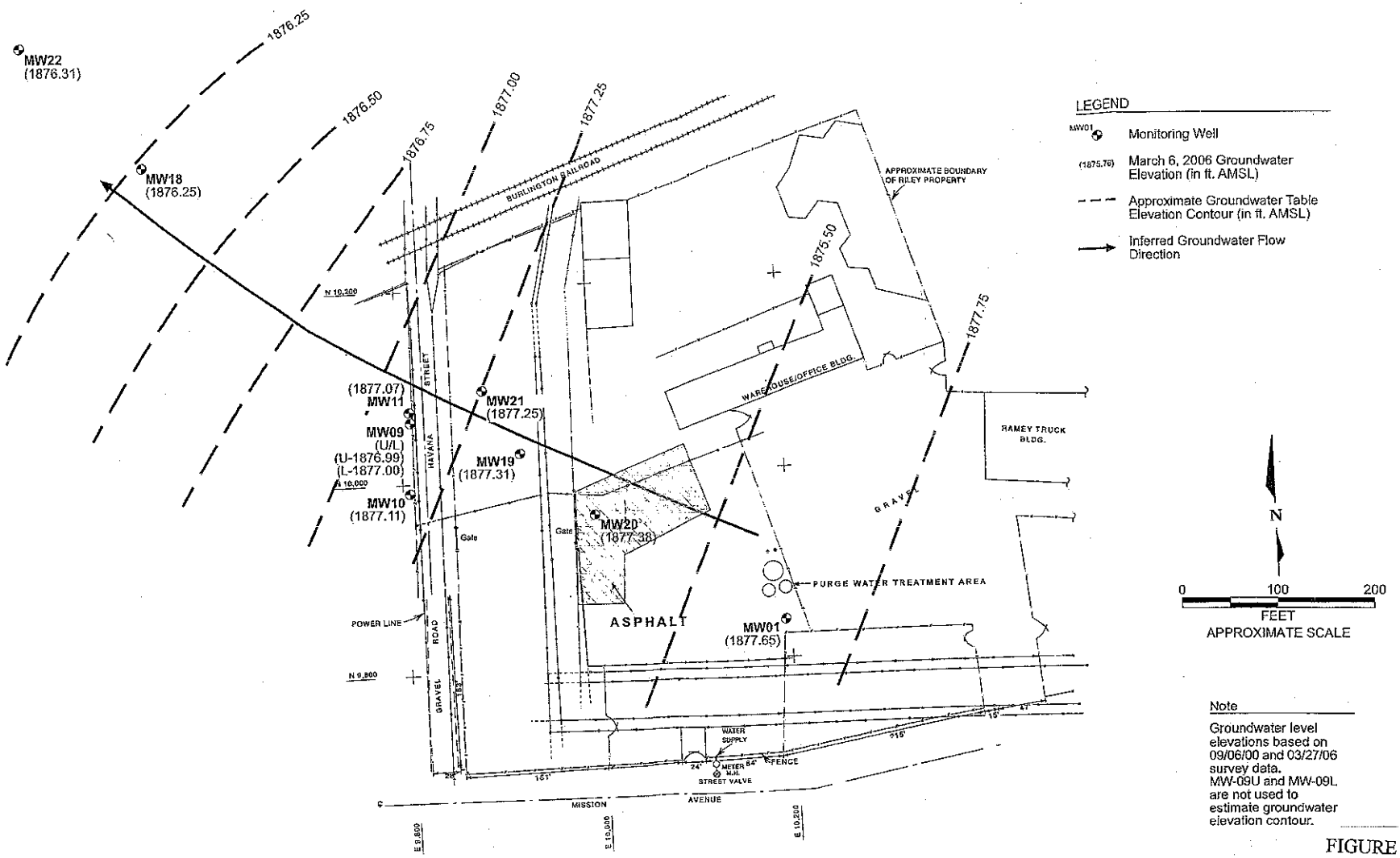
Parcel Boundary

35104.1108 Spokane County Parcel #

NOT TO SCALE

FIGURE 2

GE SPOKANE AND ADJACENT PARCELS



Note

Groundwater level elevations based on 09/06/00 and 03/27/06 survey data.
MW-09U and MW-09L are not used to estimate groundwater elevation contour.

FIGURE 3

FIRST QUARTER 2006 GROUNDWATER CONTOUR MAP

GE SPOKANE/GROUNDWATER MONITORING/WA

Golder Associates

DRAWING NO. 0031250008664Ofg05.fh11 DATE 04/20/06 DRAWN BY EL

FIGURE 4. PCB CONCENTRATIONS IN MONITORING WELLS

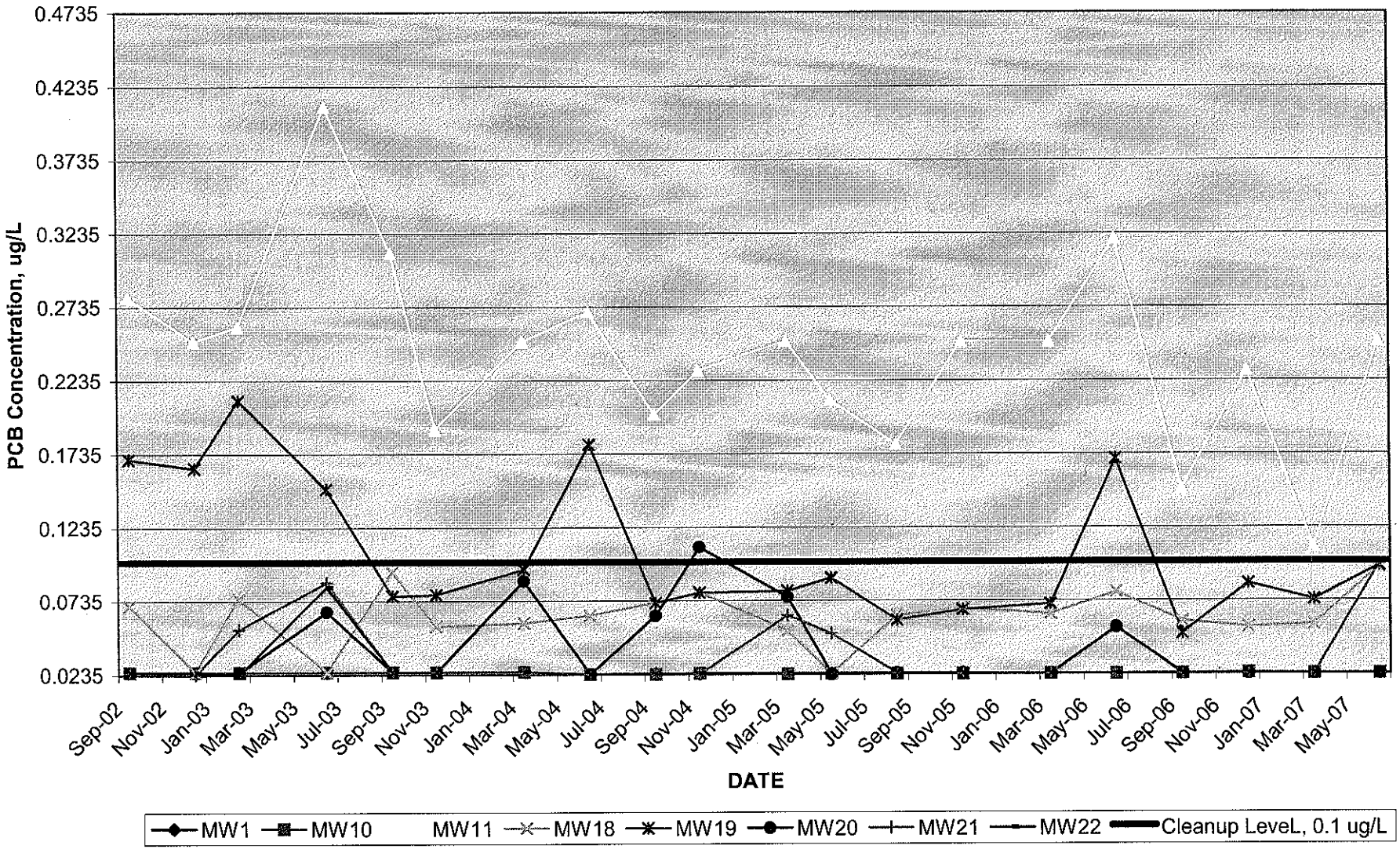


FIGURE 5. MW01 PCB CONCENTRATIONS AND GROUND WATER ELEVATIONS

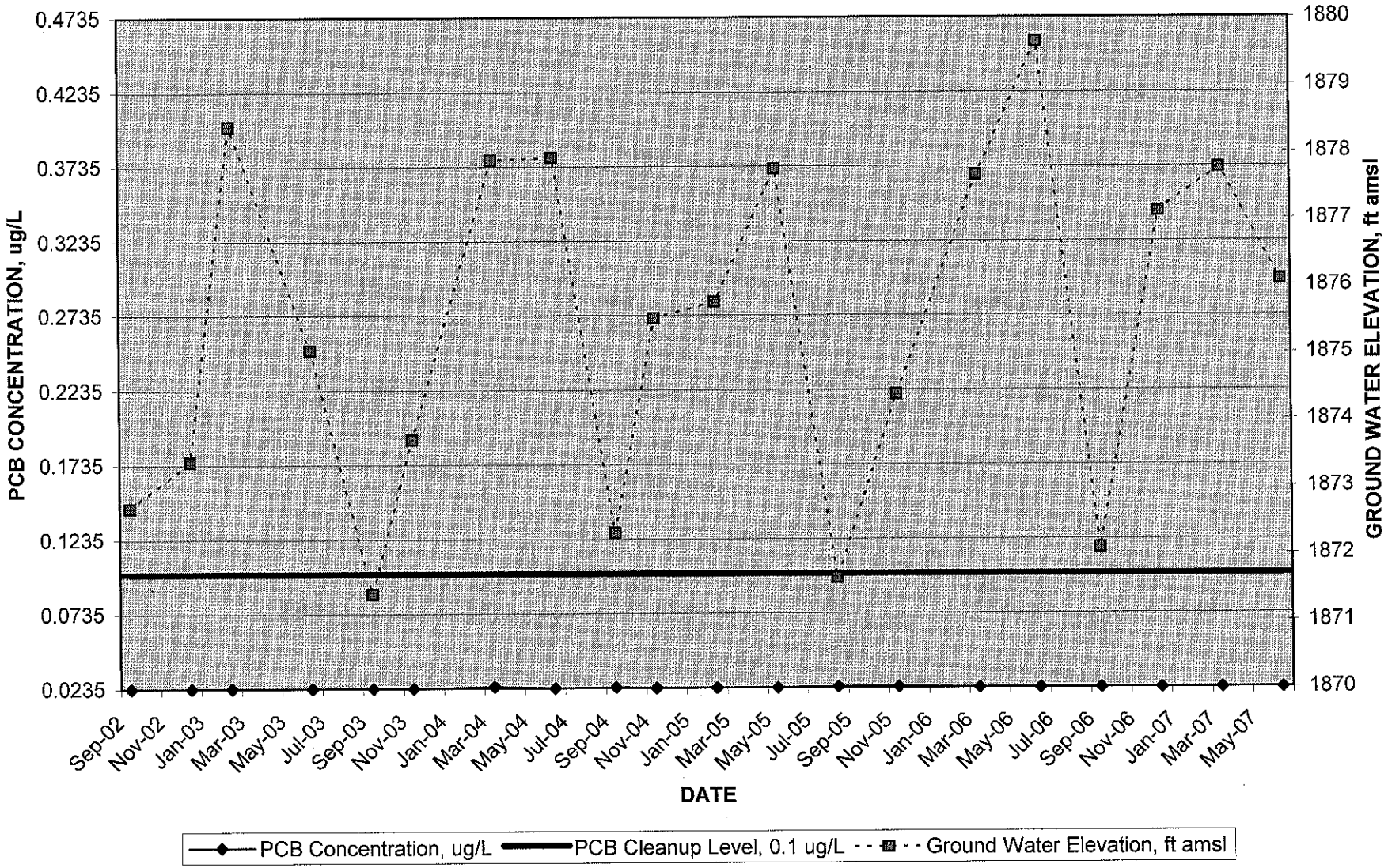


FIGURE 6. MW20 PCB CONCENTRATIONS AND GROUND WATER ELEVATIONS

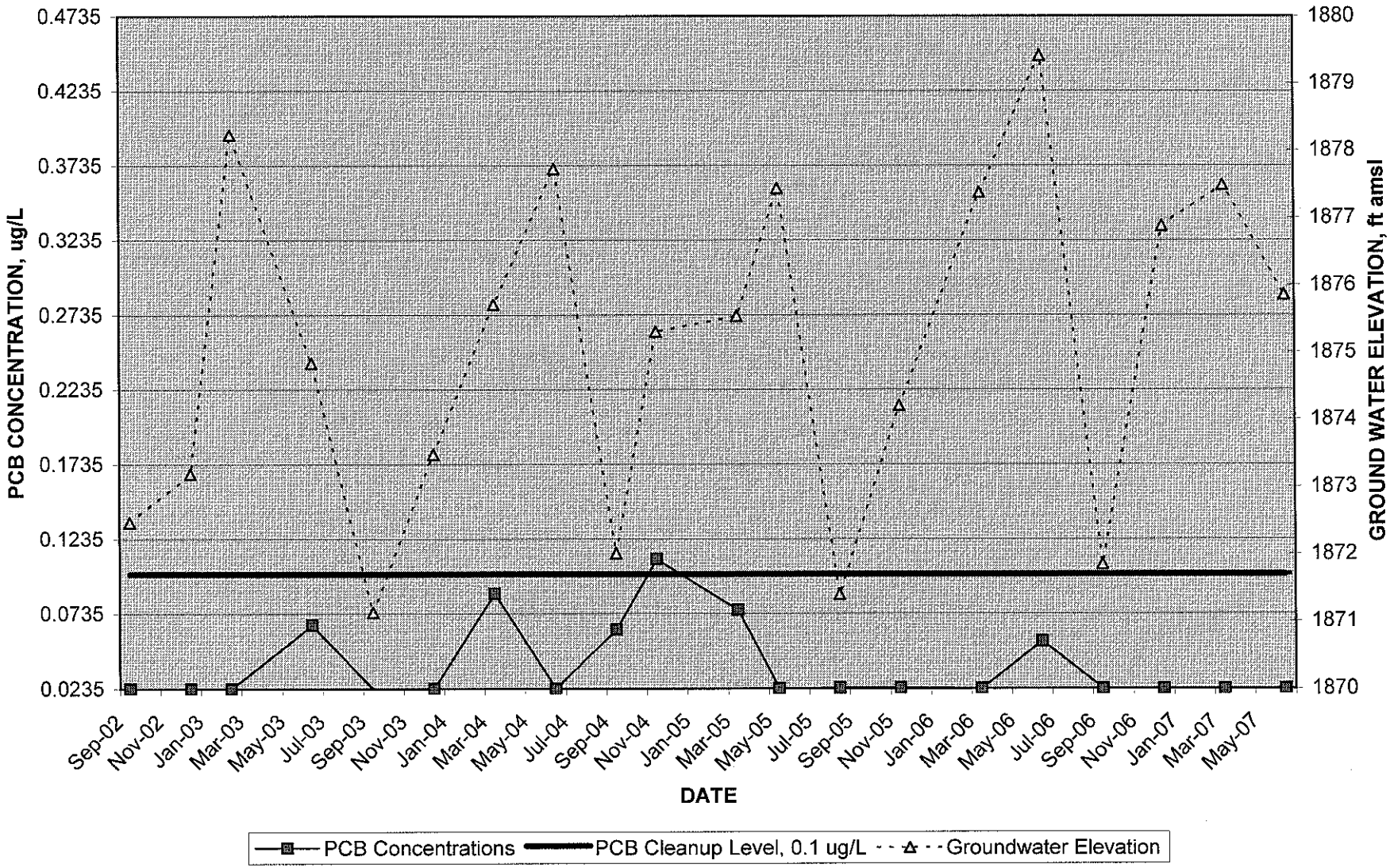


FIGURE 7. MW19 PCB CONCENTRATIONS AND GROUND WATER ELEVATIONS

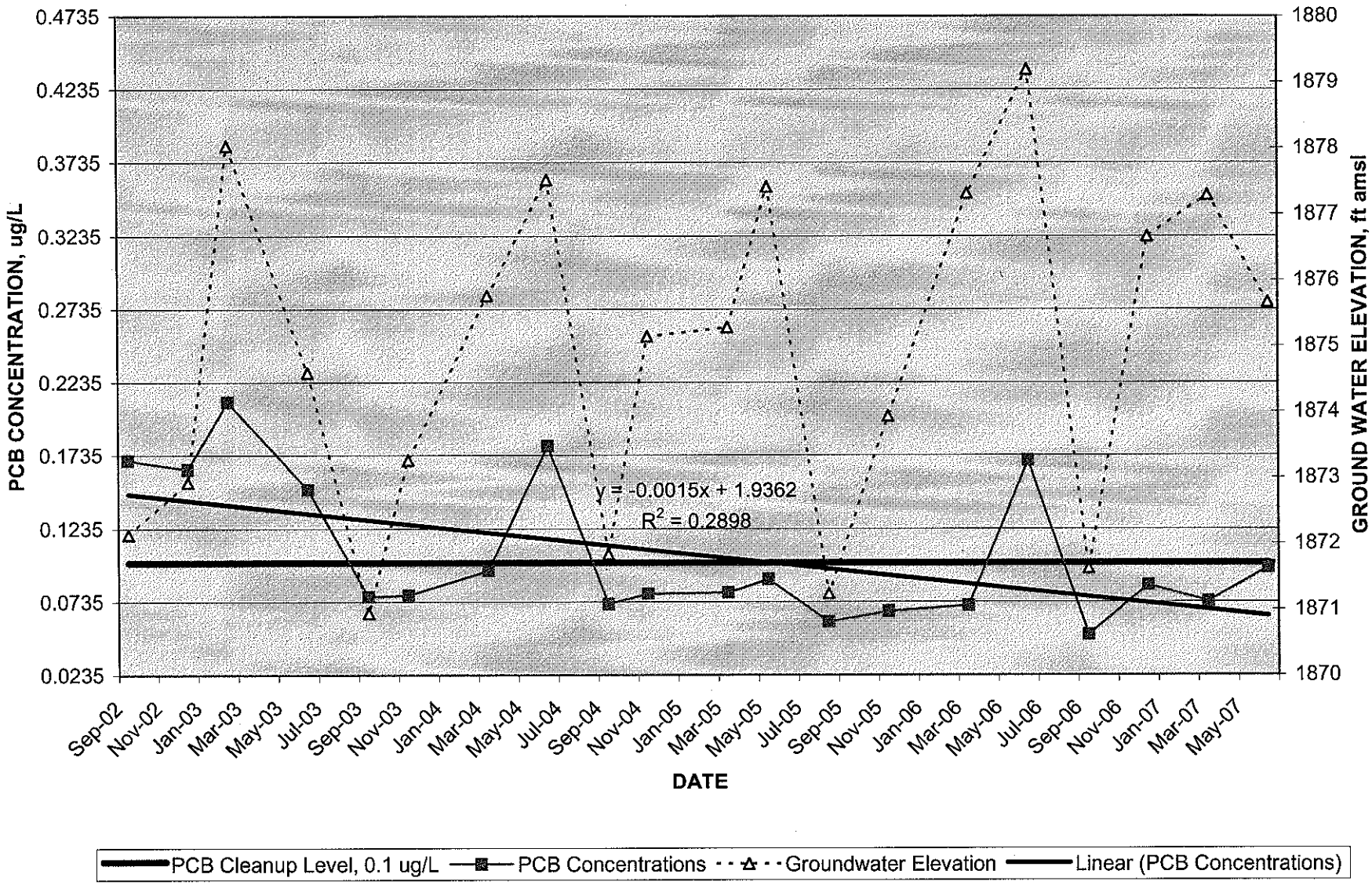


FIGURE 8. MW21 PCB CONCENTRATIONS AND GROUND WATER ELEVATIONS

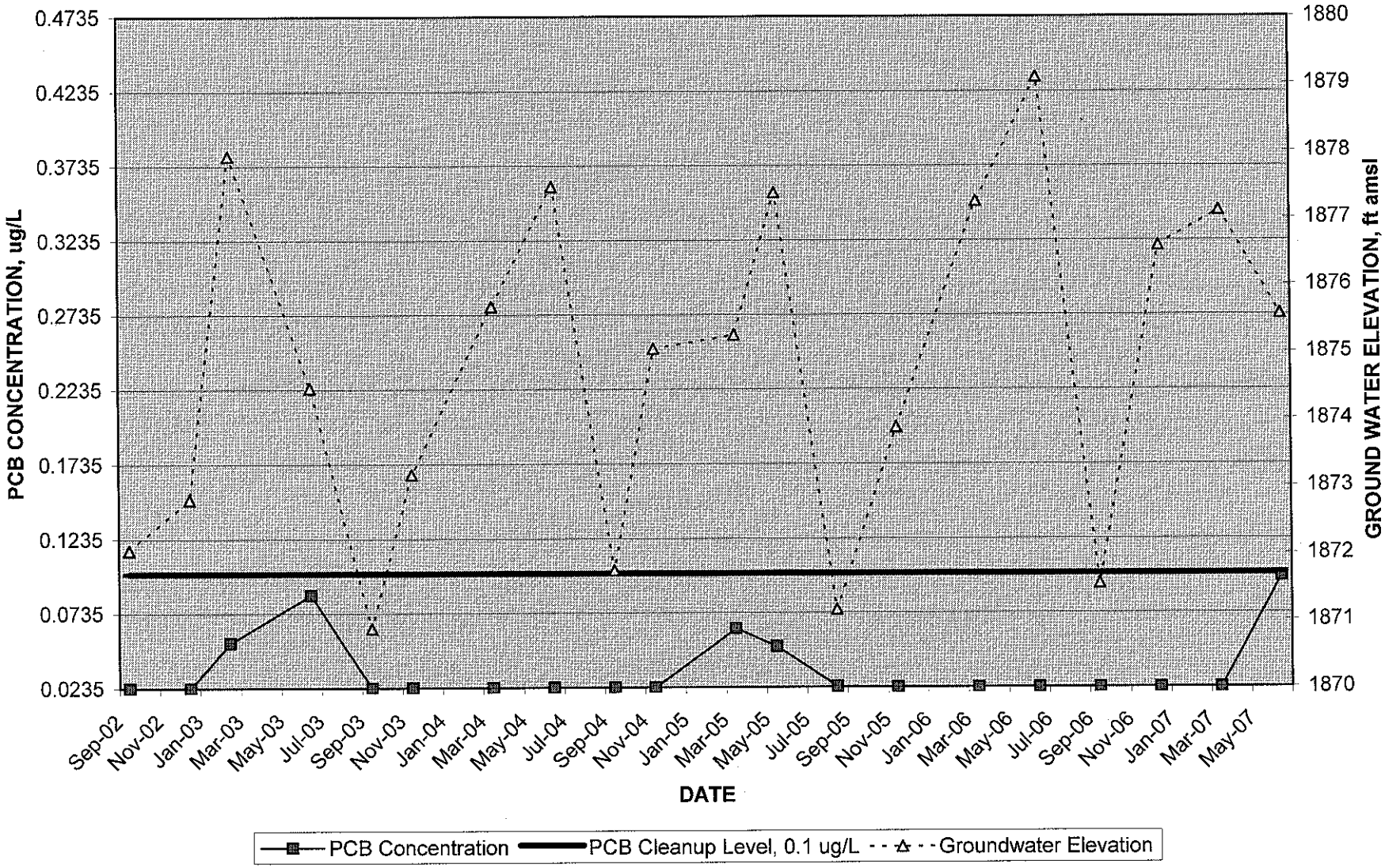


FIGURE 9. MW10 PCB CONCENTRATIONS AND GROUND WATER ELEVATIONS

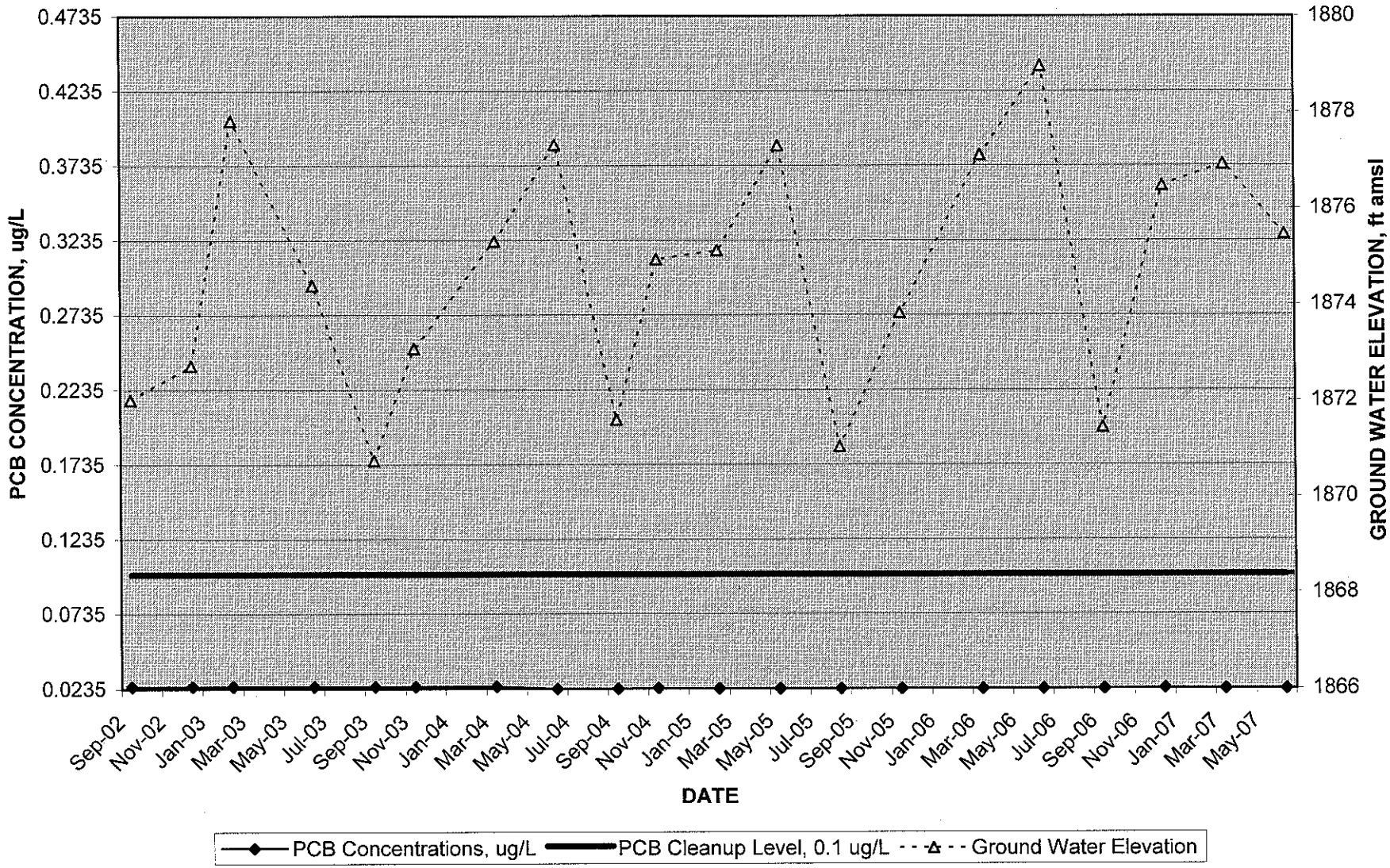


FIGURE 10. MW11 PCB CONCENTRATIONS AND GROUND WATER ELEVATIONS

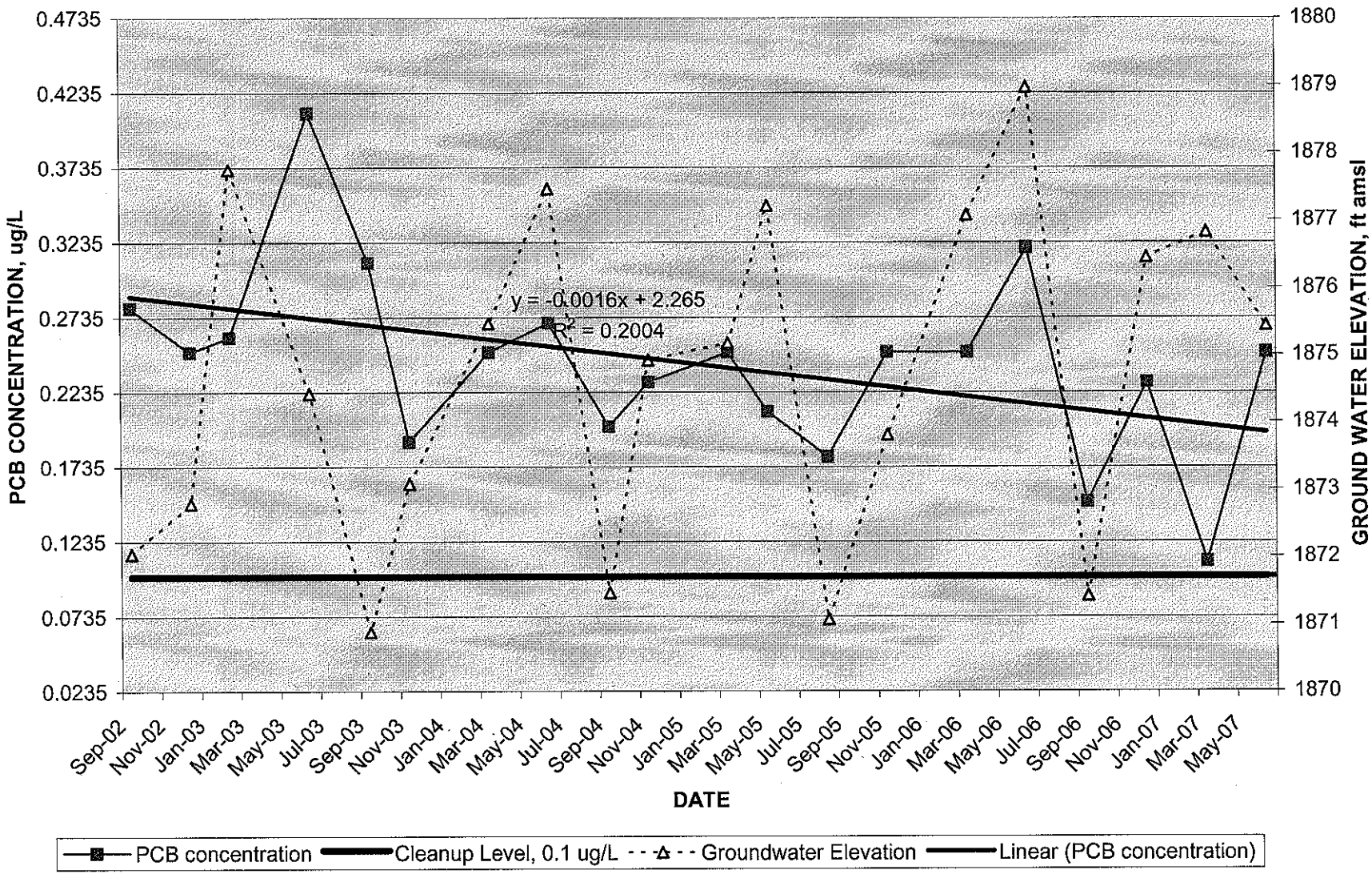


FIGURE 11. MW18 PCB CONCENTRATIONS AND GROUND WATER ELEVATIONS

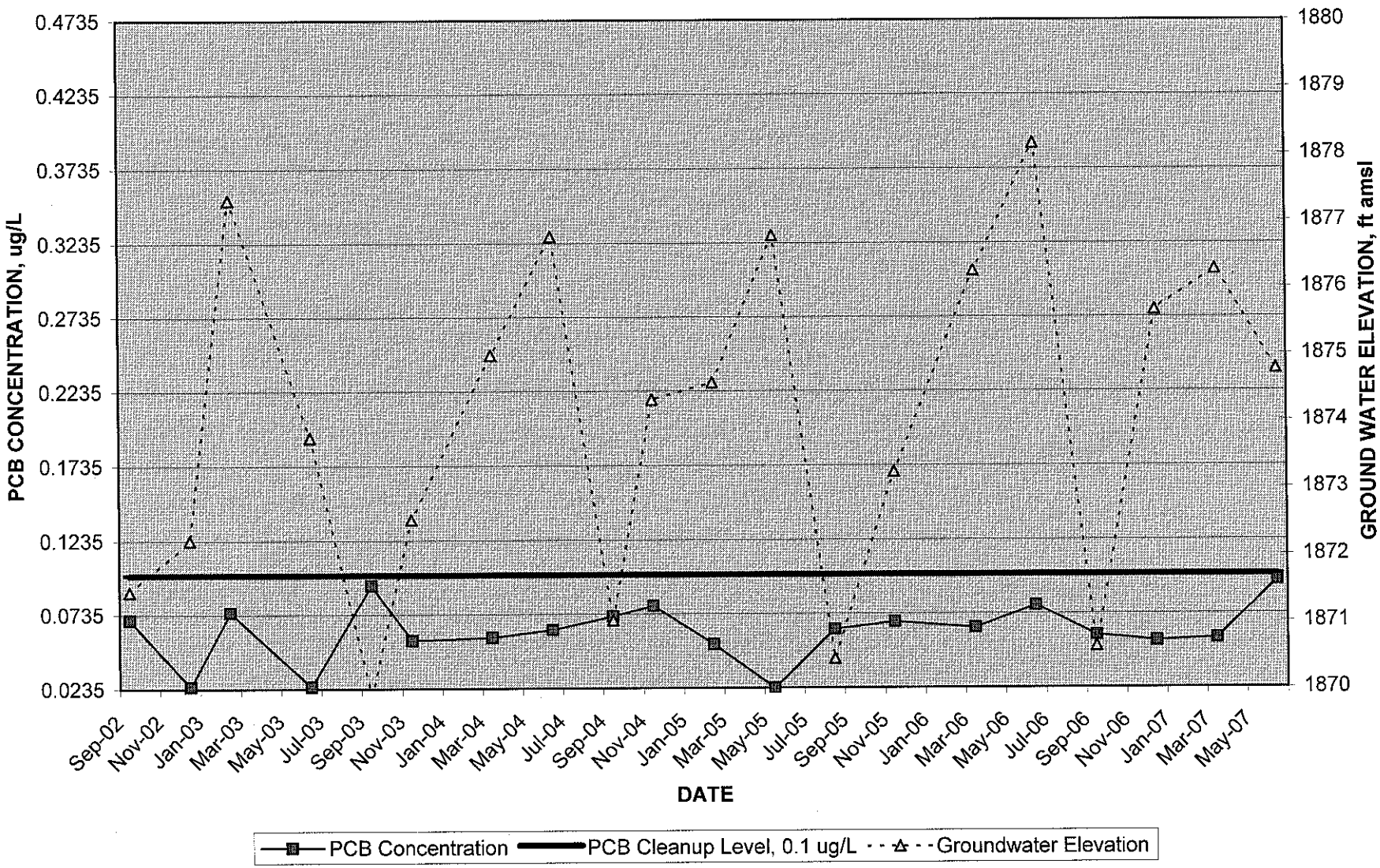
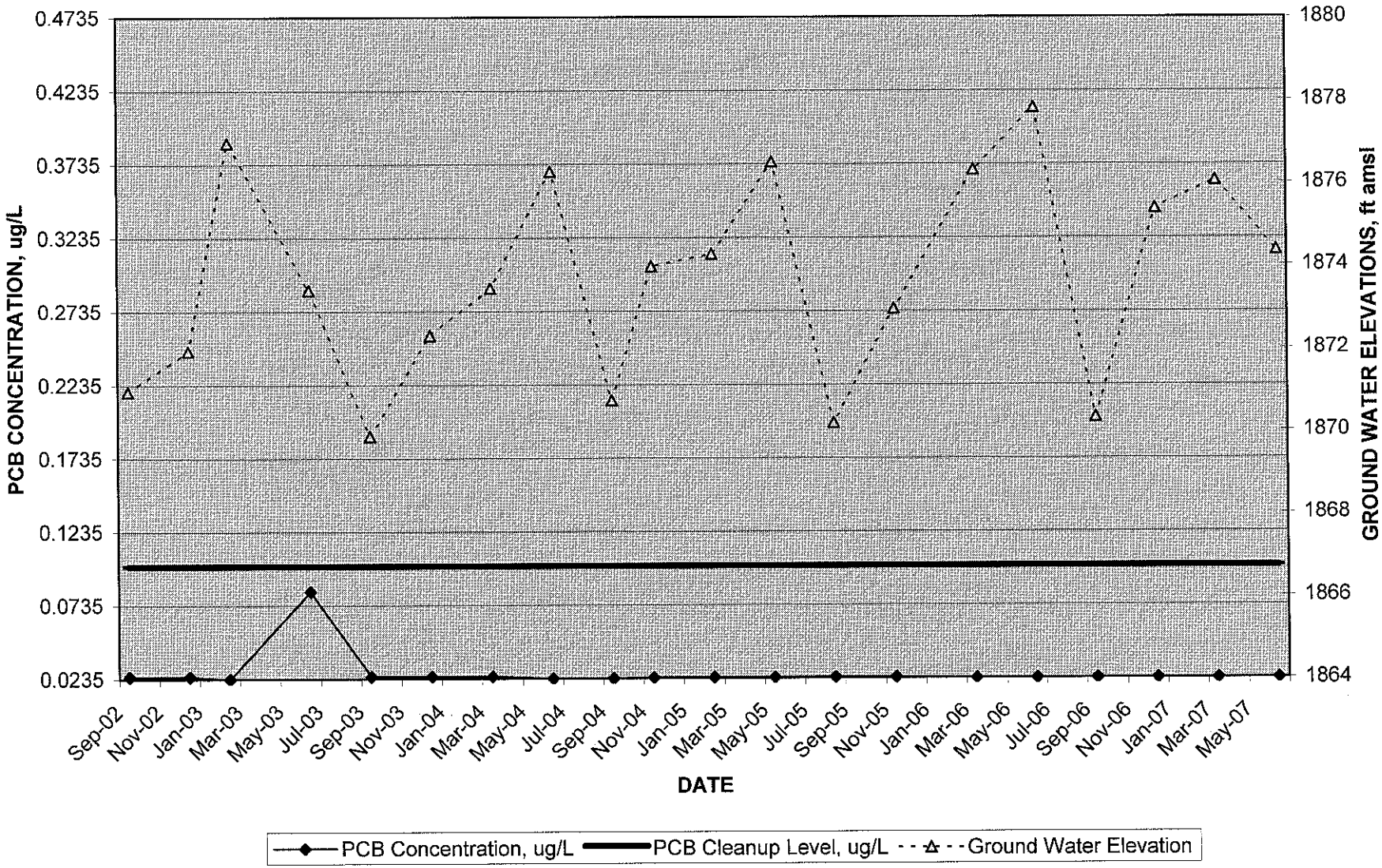


FIGURE 12. MW22 PCB CONCENTRATIONS AND GROUND WATER ELEVATIONS



TABLES

TABLE 1. PCB CONCENTRATIONS IN COMPLIANCE MONITORING WELLS

DATE	Total PCB Concentrations, ug/L							
	MW-01	MW-20	MW-19	MW-21	MW-10	MW-11	MW-18	MW-22
Sep-02	0.047U	0.047UJ	**0.17**	0.047UJ	0.047U	**0.28**	**0.07**	0.047U
							0.071	
Dec-02	0.047U	0.047U	**0.164**	0.047U	0.047UJ	**0.25**	0.047U	0.047U
							0.062J	
Feb-03	0.047U	0.047U	**0.21**	**0.054**	0.047U	**0.26**	**0.075**	0.047U
			0.17					
Jun-03	0.047U	**0.066**	**0.15**	**0.086**	0.047U	**0.41**	0.047U	**0.083**
Sep-03	0.047U	0.047U	**0.077**	0.047U	0.047U	**0.31**	**0.093**	0.047U
Nov-03	0.047UJ	0.047 UJ	**0.078**	0.047UJ	0.047UJ	**0.19**	**0.056**	0.047U
							0.054	
Mar-04	0.049U	**0.087**	**0.095**	0.047U	0.045U	**0.25**	**0.058**	0.048U
			0.128			**0.2**	0.046U	
							0.05	
Jun-04	0.047U	0.047U	**0.18**	0.047U	0.047U	**0.27**	**0.063**	0.047U
		0.047U						
Sep-04	0.048U	**0.063**	**0.072**	0.047U	0.047U	**0.2**	**0.072**	0.047U
						0.2		
Nov-04	0.047U	**0.11**	**0.079**	0.047U	0.048U	**0.23**	**0.079**	0.048U
							0.083	
Feb-05	0.047U	**0.076**	**0.08**	**0.063**	0.047U	**0.25**	**0.053**	0.048U
		0.059						
May-05	0.047U	0.047U	**0.089**	**0.051**	0.047U	**0.21**	0.047U	0.047U
							0.062	
Aug-05	0.048U	0.048U	**0.06**	0.048U	0.047U	**0.18**	**0.063**	0.047U
						0.19		
Nov-05	0.048U	0.048U	**0.067**	0.047U	0.047U	**0.25**	**0.068**	0.048U
							0.048U	
Mar-06	0.047U	0.047U	**0.071**	0.047U	0.047U	**0.25**	**0.064**	0.047U
			0.073					
Jun-06	0.047U	**0.055**	**0.17**	0.047U	0.047U	**0.32**	**0.079**	0.047U
						0.29		
Sep-06	0.047U	0.047U	**0.051**	0.047U	0.047U	**0.15**	**0.059**	0.047U
							0.051	
Dec-06	0.047U	0.047U	**0.085**	0.047U	0.048U	**0.23**	**0.055**	0.047U
Mar-07	0.047U	0.048U	**0.074**	0.047U	0.047U	**0.11**	**0.057**	0.047U
						0.27		
Jun-07	0.047U	0.047U	**0.097**	**0.098**	0.047U	**0.25**	**0.096**	0.047U
				0.085				

U - Not detected

UJ - Not detected due to QC deficiencies

J - Estimated due to QC deficiencies

Bold cells - Detected concentrations

Highlighted cells - Exceeds cleanup levels of 0.1 ug/L

TABLE 2. PCB CONCENTRATIONS AND GROUND WATER ELEVATIONS FOR MW11

MW11					
	Aroclors, ug/L			Total PCBs,	Groundwater Elevation
Date	1242	1254	1260	ug/L	(ft msl)
1/22/1997				0 025	
9/5/2002	0 047U	0 047U	0 28	0.28	1872 04
12/2/2002	0 047 UJ	0 047 UJ	0.25	0 25	1872.79
2/18/2003	0 047U	0 047U	0 26	0 26	1877 75
6/24/2003	0 047U	0 047U	0 41	0 41	1874.42
9/3/2003	0 047U	0 047U	0 31	0 31	1870 88
11/25/2003	0 047U	0 047U	0 19	0 19	1873 08
3/2/2004	0 048U	0 048U	0 25	0.25	1875 46
3/2/2004	0 049U	0 049U	0.2	0.2	1875 46
6/14/2004	0 047U	0 047U	0 27	0 27	1877 46
9/13/2004	0 047U	0 047U	0 2	0 2	1871 46
9/13/2004	0 048U	0 048U	0 2	0 2	1871 46
11/30/2004	0 047U	0 047U	0 23	0 23	1874 92
3/1/2005	0 032U	0 032U	0 25	0 25	1875 17
5/17/2005	0 047UJ	0 047UJ	0 21	0 21	1877 21
8/31/2005	0 048U	0 048U	0 18	0 18	1871 07
8/31/2005	0 048U	0 048U	0 19	0 19	1871 07
11/30/2005	0 048U	0 048U	0 25	0 25	1873 8
3/8/2006	0 047U	0 047U	0 25	0 25	1877 07
6/7/2006	0 047U	0 047U	0 32	0 32	1878 97
6/7/2006	0 047U	0 047U	0 29	0 29	1878 97
9/6/2006	0 047U	0 047U	0 15	0 15	1871 42
12/7/2006	0 047U	0 047U	0 23	0 23	1876 45
3/8/2007	0 047U	0 047U	0 11	0 11	1876 82
3/9/2007	0 047U	0 047U	0 27	0 27	1876 82
6/11/2007	0 047U	0 047U	0 25	0 25	1875 44